

ABSTRACT OF THE DISCLOSURE

A 3D image acquisition apparatus comprises a pattern projection section which projects a pattern on an object to be measured, an imaging section which is disposed at a distance from the pattern projection section and images the object on which the pattern has been projected, and a depth calculation section which detects the projection pattern projected on the object on the basis of an image acquired by the imaging section, collates the detected pattern and the projected pattern, and calculates a depth of respective parts of the object on the basis of the correspondency of the collation. The projected pattern is stripes/matrix formed by alternately arranging areas with local maximum/minimum luminance values. Thus, stripes/matrix boundaries can be exactly extracted from the pattern projection image, and correct decoding is performed from the encoded projection image even where the object is not a white-based color one or a low-saturation color one.

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